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32-BIT EMBEDDED PROCESSORS

QUARTER 1, 2003
SG1001/D REV 0

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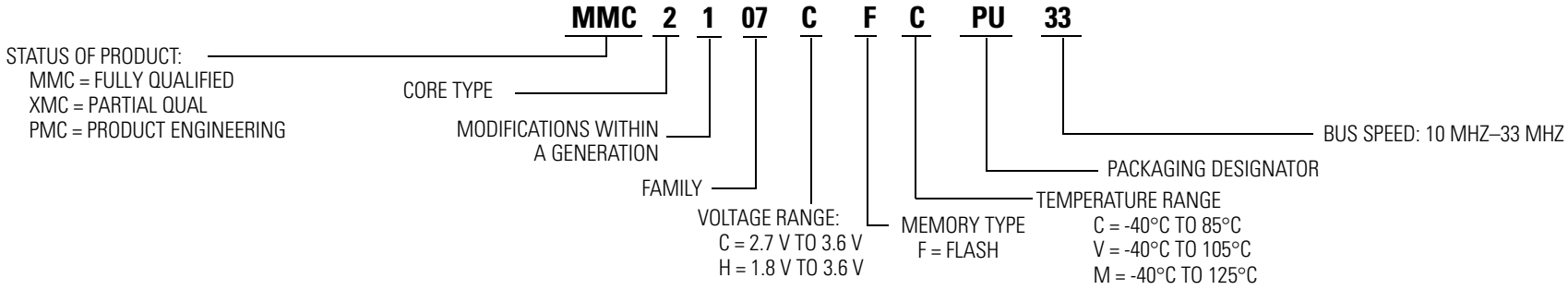
What's New!

Product	Description
ColdFire MCF5249	The first product in its new family of Audio processors based on the 32-bit ColdFire Architecture - the MCF5249 - offers an attractive combination of large on-chip memory (96K SRAM), integrated peripherals and competitive price: performance ratio. Optimized for digital audio systems but ideal for a wide range of applications - the MCF5249. Available for order Q1/2003.
MPC565/6	One of the most highly integrated microcontrollers in the industry, the MPC565 offers 1.0MB of embedded Flash in two blocks for programming flexibility. The product features popular peripherals such as 3 TouCAN modules (CAN 2.0B), 3x TPU, Censorship security in Flash, NEXUS Interface/READI and Dual A/D Converters. Code compression is available on the MPC566. A temperature range (-55°C to 125°C) is available.
PCF5282	New ColdFire V2 Core device. Offers 59 (Dhrystone 2.1) MIPS at 66 MHz performance. First ColdFire MCU to offer 512KB Flash memory, 10/100 Ethernet MAC and Enhanced CAN 2.0B controller.
PCF5280	Flashless version of the PCF5282.

MMC2100 Product Table

Product	ROM (Kbytes)	RAM (Kbytes)	Flash (Kbytes)	Timer	PWM	Serial	A/D	Operating Voltage (V)	Operating Frequency (MHz)	Temp	Packaging	Status	Additional Information	Documentation
MMC2107	0	8	128	1 Dual 4-channel 16-bit capture/ compare, PWN capability, watchdog	See Timer	Dual SCI, SPI	Queued 8-CH 10-Bit	2.7–3.6	33	C	100-pin LQFP 144-pin LQFP	Available	PLL clock, 32 source interrupt controller, periodic interrupt timer, external bus interface with 23 address, 16/32 data and 4 chip select lines, OnCE debug module	MMC2107/D MCORERM/AD
MMC2113	0	8	128	1 Dual 4-channel 16-bit capture/ compare, PWN capability, watchdog	See Timer	Dual SCI, SPI	Queued 8-CH 10-Bit	2.7–3.6	33	C	100-pin LQFP 144-pin LQFP 196-ball MAPBGA	Available	PLL clock, 32 source interrupt controller, periodic interrupt timer, external bus interface with 23 address, 16/32 data and 4 chip select lines, OnCE debug module, Offers Flash Security	MMC2114/D
MMC2114	0	32	256	1 Dual 4-channel 16-bit capture/ compare, PWN capability, watchdog	See Timer	Dual SCI, SPI	Queued 8-CH 10-Bit	2.7–3.6	33	C	100-pin LQFP 144-pin LQFP 196-ball MAPBGA	Available	PLL clock, 32 source interrupt controller, periodic interrupt timer, external bus interface with 23 address, 16/32 data and 4 chip select lines, OnCE debug module, Offers Flash Security	MMC2114/D
MMC2001	256	32	0	Time-of-day, periodic interrupt timer, COP	6-CH 10-bit	Dual UART Interval SPI	n/a	1.8–3.6	33	C	144-pin LQFP	Samples Available	ROM includes debugger, peripheral device drivers, and a monitor external bus interface with 22 address/16 data and 4 chip selects, OnCE debug module, KBI (16 pins). Sample part number: KMMC2001HCPV33B	MMC2001RM/D MCORERM/AD
MMC2003 (GPS)	256	32	0	Time-of-day, periodic interrupt timer, COP	6-CH 10-bit	Dual UART Interval SPI	n/a	1.8–3.6	16	C, V	144-pin LQFP	PPAP Available	EEPROM (Bytes) = 0, 12 Channel Correlator (GPS)	MMC2003RM/D MCORERM/AD

Product Numbering System for MMC2100

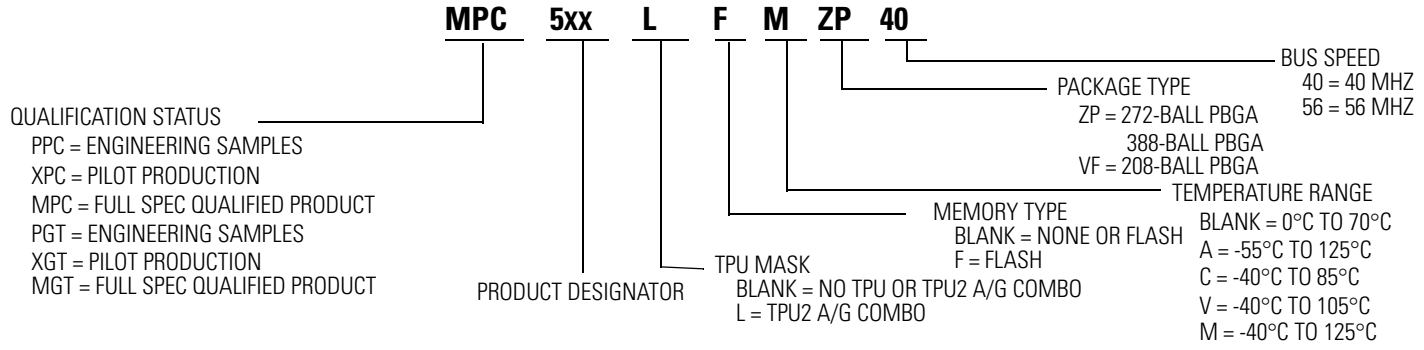


MPC500 FAMILY

MPC500 Product Table

Product	ROM (Kbytes)	RAM (Kbytes)	Flash (Kbytes)	Product Integration	Timer	Serial	MUX	A/D	PWM	Operating Voltage	Operating Frequency (MHz)	Temp	Packaging	Additional Information	Documentation
MPC555	0	26 + 6 for TPU	448	USIU	50-channel timer system: 2 TPU3 + MIOS1	QSMCM (2 SCI + QSPI) + 2 TouCAN	2 x TouCAN	2 QADC (10-Bit A/D with 64 result registers each) 32 channels on chip	8 x PWM	3.3 Vdc for core, 5.0 Vdc for Flash	40	A, C, M	272-ball PBGA	Production Available	MPC555UM/AD TPURM/AD RCPURM/AD
MGT560	0	24 + 4 for TPU	0	USIU	1 TPU3 MIOS 14	QSMCM (2 SCI + QSPI) + 2 TouCAN	2 x TouCAN	1 QADC (10-Bit A/D with 64 result registers each) 32 channels on chip	5 x PWM	2.6 Vdc for core, 3.3 Vdc for A/D and I/O	40 or 56	V	208-ball MAPBGA	Production Available	MGT560RM/D
MPC561	0	32 + 8 for TPU + 2 for DECRAM	0	USIU	54-channel timer system: 2 TPU3 + MIOS14	QSMCM (2 SCI + 1 QSPI) + 3 TouCAN	3 x TouCAN	2 QADC (10-Bit A/D with 64 result registers each) 32 channels on chip	12 x PWM	2.6 Vdc for core, 5.0 Vdc for A/D and I/O	40 or 56	C, M	388-ball PBGA	Available	MPC561UM/AD TPURM/AD RCPURM/AD
MPC562	0	32 + 8 for TPU + 2 for DECRAM	0	USIU	54-channel timer system: 2 TPU3 + MIOS14	QSMCM (2 SCI + 1 QSPI) + 3 TouCAN	3 x TouCAN	2 QADC (10-Bit A/D with 64 result registers each) 32 channels on chip	12 x PWM	2.6 Vdc for core, 5.0 Vdc for A/D and I/O	40 or 56	C, M	388-ball PBGA	Available Offers code compression.	MPC561UM/AD TPURM/AD RCPURM/AD
MPC563	0	32 + 8 for TPU + 2 for DECRAM	512	USIU	54-channel timer system: 2 TPU3 + MIOS14	QSMCM (2 SCI + 1 QSPI) + 3 TouCAN	3 x TouCAN	2 QADC (10-Bit A/D with 64 result registers each) 32 channels on chip	12 x PWM	2.6 Vdc for core, 5.0 Vdc for A/D and I/O	40 or 56	C, M	388-ball PBGA	Available	MPC563UM/AD TPURM/AD RCPURM/AD
MPC564	0	32 + 8 for TPU + 2 for DECRAM	512	USIU	54-channel timer system: 2 TPU3 + MIOS14	QSMCM (2 SCI + 1 QSPI) + 3 TouCAN	3 x TouCAN	2 QADC (10-Bit A/D with 64 result registers each) 32 channels on chip	12 x PWM	2.6 Vdc for core, 5.0 Vdc for A/D and I/O	40 or 56	C, M	388-ball PBGA	Available Offers code compression.	MPC563UM/AD TPURM/AD RCPURM/AD
MPC565	0	32 + 10 for TPU + 4 for DECRAM	1M	USIU	70-channel timer system: 3 TPU3 + MIOS14	QSMCM x 2 (4 SCI + 2 QSPI) + 3 TouCAN	3 x TouCAN 1 x J1850	2 QADC (10-Bit A/D with 64 result registers each) 40 channels on chip	12 x PWM	2.6Vdc for core, 5.0Vdc for A/D and I/O	40 or 56	C, M	388-ball PBGA	Available	MPC566UM/AD TPURM/AD RCPURM/AD
MPC566	0	32 + 10 for TPU + 4 for DECRAM	1M	USIU	70-channel timer system: 3 TPU3 + MIOS14	QSMCM x 2 (4 SCI + 2 QSPI) + 3 TouCAN	3 x TouCAN 1 x J1850	2 QADC (10-Bit A/D with 64 result registers each) 40 channels on chip	12 x PWM	2.6Vdc for core, 5.0Vdc for A/D and I/O	40 or 56	A, C, M	388-ball PBGA	Available Offers code compression	MPC566UM/AD TPURM/AD RCPURM/AD

Product Numbering System for MPC500



68xxx General-Purpose Processors

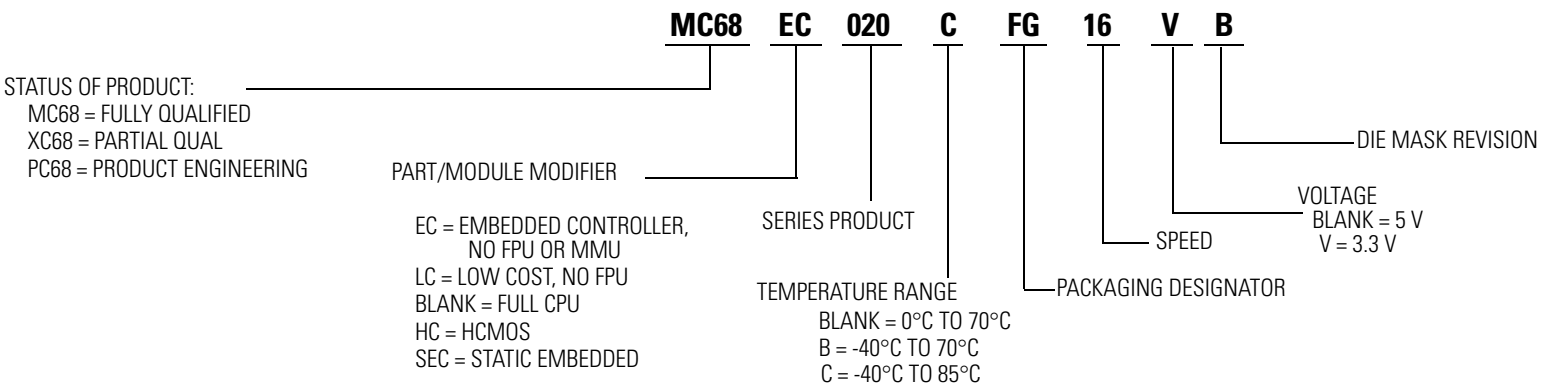
Product	Description	On-Chip Instruction (bytes)	On-Chip Data Cache (bytes)	MMU	FPU	Operating Voltage (V)	Performance (Max) MIPS	Additional Information	Packaging	Speed (MHz)	Rev	Temp
MC68EC000	8-/16-/32-Bit HCMOS Embedded MPU	n/a	n/a	n/a	n/a	5.0	2	Low-cost embedded control MPU with 8-/16-bit selectable data bus.	68-pin PLCC 64-pin QFP	8, 10, 12, 16, 20	n/a	C
MC68HC000	HCMOS 16-/32-Bit MPU	n/a	n/a	n/a	n/a	5.0	2	Complete pin and timing MC68000-compatibility with a tenth of the power dissipation.	68-pin PLCC 68-pin PGA	8, 10, 12, 16, 20	n/a	C
MC68HC001	Statically Switchable/8-/16-Bit Data Bus	n/a	n/a	n/a	n/a	5.0	2	Functionally compatible with MC68000 and MC68008.	68-pin PLCC	8, 10, 12, 16	n/a	C
MC68SEC000	8-/16-/32-Bit Static HCMOS Embedded MPU	n/a	n/a	n/a	n/a	3.3 – 5.0	2	Static version of the MC68EC000.	64-pin QFP 64-pin LQFP	10, 16, 20	n/a	C
MC68020	32-Bit MPU	256	n/a	n/a	n/a	5.0	10	Complete 32-bit MPU. 5-Gbyte linear address space. Co-processor interface. Instruction cache. Dynamic bus sizing. Excellent MPU for graphics control. On-chip cache speeds drawing algorithms. Bit field support for pixel manipulation.	114-pin PGA 132-pin CQUAD 132-pin PQFP	16, 20, 25, 33	E	C
MC68EC020	32-Bit Embedded MPU	256	n/a	n/a	n/a	5.0	10	32-bit data bus MPU with 24-bit address bus. Instruction cache. Dynamic bus sizing. Coprocessor interface. Low-cost packaging.	100-pin QFP	16, 25	n/a	C
MC68030	Enhanced 32-Bit MPU	256	256	On-chip	n/a	5.0	18	Complete 32-bit MPU with on-chip instruction and data caches, internal parallel buses, enhanced bus controller, and on-chip MMU.	128-pin PGA 132-pin CQUAD	16, 20, 25, 33, 40, 50	C	C
MC68EC030	Embedded MPU	256	256	n/a	n/a	5.0	18	32-bit MPU for embedded applications. On-chip instruction and data caches provide high-speed access for control routines and data. Utilizes low-cost DRAM bus interface.	132-pin CQUAD	25, 40	C	C
MC68040	32-Bit MPU MMU FPU	4K	4K	On-chip	On-chip	5.0	44	Complete 32-bit MPU with on-chip instruction/data caches (4 Kbytes each). On-chip MMU. Full IEEE floating point, multiprocessing support with full M68000 Family compatibility.	179-pin PGA 184-pin CQUAD	25, 33, 40	A	n/a
MC68EC040	Embedded 32-Bit High Performance Processor	4K	4K	n/a	n/a	5.0	44	High-performance 32-bit MPU with on-chip instruction and data cache provides high-speed access for control routines and data. Utilizes low-cost DRAM bus interface.	179-pin PGA 184-pin CQUAD	20, 25, 33, 40	A	B
MC68LC040	High Performance 32-Bit Processor	4K	4K	On-chip	n/a	5.0	44	68040-compatible integer unit and MMU. Ideal solution for cost-sensitive computer or sophisticated embedded applications.	179-pin PGA 184-pin CQUAD	20, 25, 33, 40	A	n/a

68xxx General-Purpose Processors (continued)

Product	Description	On-Chip Instruction (bytes)	On-Chip Data Cache (bytes)	MMU	FPU	Operating Voltage (V)	Performance (Max) MIPS	Additional Information	Packaging	Speed (MHz)	Rev	Temp
MC68040V	32-Bit MP MMU, Low-Voltage	4K	4K	On-chip	n/a	3.3	44	Low-voltage complete 32-bit MPU with on-chip instruction/data caches (4 Kbytes each). On-chip MMU. Multiprocessing support.	182-pin PGA 184-pin CQUAD	25, 33, 40	n/a	n/a
MC68060	Superscalar 32-Bit Processor	8K	8K	On-chip	On-chip	3.3 – 5.0	110	RISC hybrid superscalar MPU with full M68000 Family compatibility. Includes dual integer units, on-chip instruction/data caches (8 Kbytes each), on-chip MMU, and full IEEE compliant FPU.	206-pin PGA	50, 60	n/a	n/a
MC68EC060	Superscalar 32-Bit Processor	8K	8K	n/a	n/a	3.3 – 5.0	110	RISC hybrid superscalar MPU with full M68000 Family compatibility. Includes dual integer units, on-chip instruction/data caches (8 Kbytes each). Ideal for high-performance embedded control applications.	206-pin PGA 304-ball TBGA	50, 66, 75	n/a	n/a
MC68LC060	Superscalar 32-Bit Processor	8K	8K	On-chip	n/a	3.3 – 5.0	110	RISC hybrid superscalar MPU with full M68000 Family compatibility. Includes dual integer units, on-chip instruction/data caches (8 Kbytes each) and on-chip MMU.	206-pin PGA 304-ball TBGA	50, 66, 75	n/a	B
MC68882	Enhanced Floating-Point Coprocessor (EFPCP)	n/a	n/a	n/a	On-chip	3.3 – 5.0	n/a	Pin-to-pin timing and software compatibility with MC68881. Dual ported registers and increased pipelining allows 2-4 × performance of MC68881. (Not recommended for new designs.)	68-pin PGA 68-pin PLCC	16, 20, 25, 33, 40, 50	A	C
MC68306	Integrated EC000Processor	n/a	n/a	n/a	n/a	5.0	2.7	68000 CPU, 68681 DUART, DRAM control all in one chip.	132-pin PQFP 144-pin LQFP	16, 20	B	C
MC68340	Integrated Processor with DMA	n/a	n/a	n/a	n/a	3.3 – 5.0	4.8	CPU32 core processor for data movement applications. Two channel DMA, two serial channels, two timers, chip selects, wait-state generation, and glue logic. (FE package not recommended for new designs.)	144-pin CQUAD 144-pin LQFP 144-pin QFP	16, 25	E	C

Note: Extended temperature products with minimum order requirements. All packages/speed combinations may not be valid — consult factory to verify.

Product Numbering System for the 68xxx Family



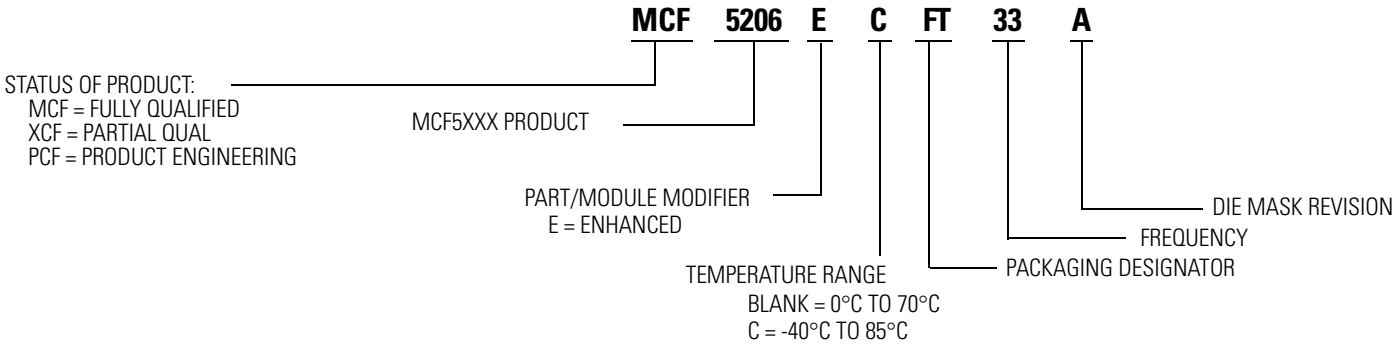
MCF5xxx FAMILY

MCF5xxx Product Table

Product	Core	Dhrys 2.1 MIPS @ max MHz	Processor Cache (bytes)	Processor SRAM (bytes)	Serial Interface, UART	Timers/ CS/ GPIO	DMA	DRAM Controller	10/100 Eth/ USB1.1	Operating Voltage (V)	Operating Frequency (MHz)	Temp (-40°C to +85°C)	Packaging	Rev	Additional Information
MCF5206	V2	17	512 I	512	2 UARTs	2/8/8	n/a	FPM, EDO	n/a	5	16, 25, 33	C	160-pin QFP	A	n/a
XCF5206e	V2	50	4K I	8K	2 UARTs	2/8/8	2-CH	FPM, EDO	n/a	3.3	40, 54	C	160-pin QFP	n/a	Enhanced pin-compatible version of 5206 with MAC, HW divide, BDM, I^2C, 5V tolerant I/O.
MCF5249	V2	125	8K I	96K	2 UART, I^2C, QSPI	2/4/up to 47	4-CH	SDRAM	n/a	1.8, 3.3	140	C	160-ball MAPBGA	n/a	EMAC, HW divide, BDM, 12-bit ADC, CDROM block. CD text, Hard Disk Drive, Memory stick interfaces. Audio decoders.
MCF5249L	V2	107	8K I	96K	2 UART, I^2C, QSPI	2/3/up to 34	4-CH	SDRAM	n/a	1.8, 3.3	120	C	144-pin LQFP	n/a	EMAC, HW divide, BDM, 12-bit ADC, CDROM block. Hard Disk Drive Interface. Audio decoders.
MCF5272	V2	63	1K I	4K	10/100 FEC, 2 UARTs, USB, QSPI	4/8/up to 32	2-CH	SDRAM	MAC/ MAC+PHY	3.3	66	C	196-ball MAPBGA	n/a	MAC, HW divide, BDM, 4 TDM GCI/IDL ports, software HDCL module, QSPI, 3 PWMs, 5V tolerant I/O.
PCF5280	V2	59	2K I	64K	3 UARTs	n/a	n/a	SDRAM	MAC/ n/a	3.3, 5	66	C	256-ball MAPBGA	n/a	Enhanced CAN 2.0B controller. Flashless version of PCF5282.
PCF5282	V2	59	2K I	64K	3 UARTs	n/a	n/a	SDRAM	MAC/ n/a	3.3, 5	66	C	256-ball MAPBGA	n/a	Enhanced CAN 2.0B controller, 512KB Flash
MCF5307	V3	75	8K U	4K	2 UARTs, I^2C	2/8/16	4-CH	SDRAM, FPM, EDO	n/a	3.3	66, 90	C	208-pin FQFP	B	MAC, HW divide, BDM, PLL, I^2C, 5V tolerant I/O.
MCF5407	V4	316	16K I, 8K D	4K	UART, USART, I^2C	2/8/16	4-CH	SDRAM, FPM, EDO	n/a	1.8, 3.3	162, 220	C	208-pin FQFP	A	Pin-compatible 5307 performance upgrade with MAC, HW divide, BDM, PLL, I^2C, 3.3V tolerant I/O.

Note: Extended temperature products with minimum order requirements. All package/speed combinations may not be valid. Consult the factory to verify.

Product Numbering System for MCF5xxx Family



683xx FAMILY

683xx Product Table

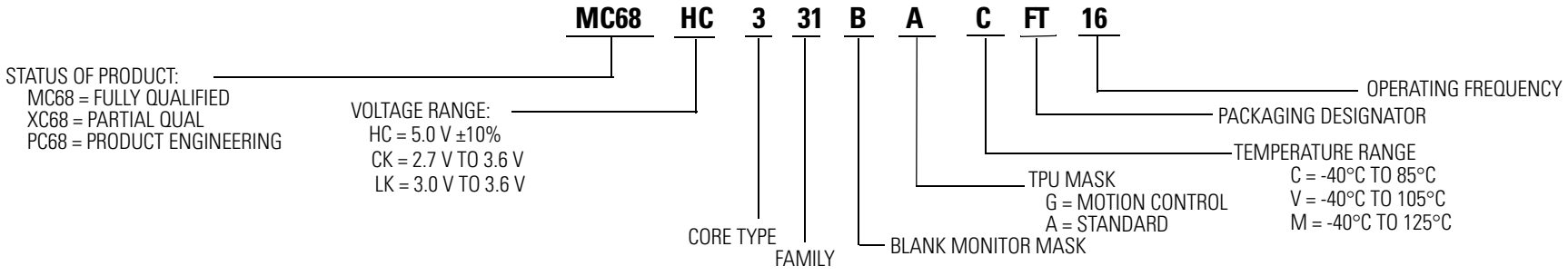
Product	ROM (Kbytes)	RAM (Kbytes)	Flash (Kbytes)	Product Integration	Timer	Serial	A/D	Operating Voltage (V)	Operating Frequency (MHz)	Temp	Packaging	Status	Additional Information	Documentation
MC68331	0	0	0	SIM	GPT	SCI, queued SPI	n/a	5.0	16, 20, 25	C, V, M	132-pin PQFP 144-pin LQFP	Available	2.7V–3.6V 16 MHz version (MC68CK331). MC68CK331 is on end of life.	MC68331UM/AD
MC68332	0	2	0	SIM	TPU	SCI, queued SPI	n/a	5.0	16, 20, 25	C, V, M	132-pin PQFP 144-pin LQFP	Available	3.0V–3.6V 16 MHz version (MC68LK332)	MC68332UM/AD MC68LK332EC16/D
MC68336	0	4 + 3.5	0	SIM	TPU CTM4	SCI, queued SPI	Queued 16-CH 10-Bit	5.0	20, 25	C, V, M	160-pin QFP	Available	—	MC68336/376PP/D MC68336/376UM/AD
MC68376	8	4 + 3.5	0	SIM	TPU CTM4	TouCAN, SCI, queued SPI	Queued 16-CH 10-Bit	5.0	20, 25	C, V, M	160-pin QFP	Available	—	MC68336/376PP/D MC68336/376UM/AD

Note: All package, speed, and temperature combinations may not be valid. Consult the factory to verify information.

683xx Reference Manuals

CPU32RM/AD	CPU32 Reference Manual
SIMRM/AD	System Integration Module Reference Manual
TPURM/AD	Timer Processor Unit Reference Manual
GPTRM/AD	General-Purpose Timer Reference Manual
QSMRM/AD	Queued Serial Module Reference Manual
ADCRM/AD	Analog-to-Digital Converter Reference Manual
CTMRM/D	Configurable Timer Module Reference Manual

Product Numbering System for 683xx Family



DragonBall™ Product Table

Product	RAM (Kbytes)	Product Integration	Timer	Serial	A/D	Operating Voltage ± 10% (V)	Operating Frequency (MHz)	Temp	Packaging	Status	Additional Information	Documentation
MC68EZ328	n/a	68EC000 core processor, LCD controller, 54 GPIO ports	(1) 16-bit	SPI, UART	n/a	3.3	16, 20	0^{o}C to 70^{o}C, -40^{o}C to 85^{o}C	100-pin LQFP 144-ball MAPBGA	Available	Sample pack part numbers begin with SPAKEZ328.	MC68EZ328UM/D
MC68VZ328	n/a	FLX68000 core processor, LCD controller, 76 GPIO ports	(2) 16-bit	SPI, UART	n/a	3.0	33, 45	0^{o}C to 70^{o}C, -40^{o}C to 85^{o}C	144-pin LQFP 144-ball MAPBGA	Available	Sample pack part numbers begin with SPAKVZ328.	MC68VZ328UM/D
MC68SZ328	100 SRAM	FLX68000 core processor, color LCD controller, ASP, DMAC, MMD/SD HC, MSHC, 93 GPIO ports	(2) 16-bit	SPI, UART, USB, $I^{2}C$	4-CH	1.8 Internal 3.0 I/O	66	0^{o}C to 70^{o}C	196-ball MAPBGA	Available	Sample pack part numbers begin with SPAKSZ328.	MC68SZ328RM/D
MC9328MX1	128 SRAM	ARM920T core processor, color LCD controller, ASP, DMAC, MMD/SD HC, MSHC, MMA, Video port, 110 GPIO ports	(2) 32-bit	SPI, UART, USB, $I^{2}C$, $I^{2}S$	4-CH	1.8 Internal 1.8/3.0 I/O	150, 200	0^{o}C to 70^{o}C	256-ball MAPBGA	Limited Samples Available	Production begins Q1/2003.	MC9328MX1RM/D
MC9328MXL	128 SRAM	ARM920T core processor, color LCD controller, DMAC, MMD/SD HC, MSHC, MMA, Video port, 110 GPIO ports	(2) 32-bit	SPI, UART, USB, $I^{2}C$, $I^{2}S$	4-CH	1.8 Internal 1.8/3.0 I/O	150, 200	0^{o}C to 70^{o}C	256-ball MAPBGA	Limited Samples Available	Production begins Q1/2003.	MC9328MXLRM/D

MGT5100 FAMILY

MGT5100 Product Table

Product	ROM (Bytes)	RAM (Bytes)	Flash (Bytes)	Product Integration	Timer	Serial	MUX	A/D	PWM	Operating Voltage (V)	Operating Frequency (MHz)	Temp (°C)	Packaging	Additional Information	Documentation
MGT5100	0	8K Used by SmartComm	o	(ATA/PCI/Memory Interface)	8 Channels (output compare/ input capture/ PWM)	2 USB, Ethernet, 3UART, 2I2C, IR, IRDA, 2 AC97, 3 CODEC, SPI All functions are not available simultaneously Used by SmartComm	2 CAN	—	Available on timer channel	1.8 Core 3.3 I/O	231	T_j = 115	272-ball PBGA	Integrated SmartComm DMA Autonomous SDRAM Interface	MGT5100UM/D

MPC823E FAMILY

MPC823E Product Tables

Product	Processor Speed (Typ)	Drystone Performance (MIPS)	Microprogrammable Module	Translation Lookaside Buffers	FPU (Floating Point Unit)	I/O (Bits)	Power Dissipation (Typ)	Miscellaneous Peripherals	Cache-L-1 Instructional (Kbytes)	Cache-L-1 Data (Kbytes)
MPC823E	66, 75 MHz	99 @ 75 MHz	CPM	8-entry	—	53	750 mW @ 66 MHz	2 UARTs, 1 IC, 1 SPI, USB	16	8

HOST PROCESSORS

Product	Packaging	Speed (MHz)	Apps Modr	Rev	Process	100% MAG Voltage Core	Voltage IO/tol (V)	SOQ	MPQ	POQ	Additional Information	Architecture
107												
XPC107A	503-ball PX (PBGA)	66, 100	L	D=1.4	Hip3	2.5 ±5%	2.5/3.3	2	24	120	60x to PCI Bridge, memory controller with support for SDRAM, ROM. I_20, I^2C support.	PowerPC ISA
603R												
MPC603R	255-ball RX (CBGA)	200, 266, 300	L	C=2.1	Hip3	2.5 ±5%	3.3/5	1	60	60	32-bit superscaler MPU with dual 16K instruction and data caches, single/double precision IEEE FPU 2.5 V core and 3.3 V I/O.	PowerPC ISA
MPC603R	255-ball ZT (PBGA)	200	L	C=2.1	Hip3	2.5 ±5%	3.3/5	1	60	300		
MPC603R	255-ball RX (CBGA)	200, 266	T	C=2.1	Hip3	2.5 ±5%	3.3/5	1	1	60		
745B												
XPC745B	255-ball PX (PBGA)	300, 350	L	E=2.8	Hip4	2.0 ±0.1 V	3.3	1	1	60	32-bit superscalar MPU with dual 32K instruction and data caches, single/double precision IEEE FPU, 32-/64-bit external data bus. Features enhanced for embedded applications.	PowerPC ISA
755B												
XPC755B	360-ball PX (PBGA)	300, 350, 400	L	E=2.8	Hip4	2.0 ±0.1 V	3.3	1	44	220	32-bit superscalar MPU with dual 32K instruction and data caches, single/double precision IEEE FPU, 32-/64-bit external data bus, external L2 cache interface (up to 1MByte) with integrated controller and cache tags. Direct Mapped SRAM capability, cache locking. Features enhanced for embedded applications.	PowerPC ISA
XPC755B	360-ball RX (CBGA)	300, 350, 400	L	E=2.8	Hip4	2.0 ±0.1 V	3.3	1	1	44		
XPC755B	360-ball RX (CBGA)	350, 400	T	E=2.8	Hip4	2.0 ±0.1 V	3.3	0	44	220		
7410												
MPC7410	360-ball RX (CBGA)	400, 450	N	E=1.4	Hip6	1.5 ±0.05 V	2.5/3.3	1	44	220	Features similar to the MPC7400 with 32-/64-bit L2 bus support and direct-mapped SRAM capability. High bandwidth 133 MHz 64-bit MPX/60x bus interface. Extended Temperature -40 to 105°C.	PowerPC ISA
MPC7410	360-ball RX (CBGA)	400, 450, 500	L	E=1.4	Hip6	1.8 ±0.1 V	2.5/3.3	1	44	220		
MPC7410T	360-ball RX (CBGA)	400, 450, 500	L	E=1.4	Hip6	1.8 ±0.1 V	2.5/3.3	1	44	220		
7441												
XPC7441	360-ball RX (CBGA)	600, 700	L	E=2.1	Hip6	1.5 ±0.05 V	1.8/2.5	0	44	220	7450 derivative with no external L3 cache.	PowerPC ISA
7445												
XPC7445A	360-ball RX (CBGA)	600, 733, 800, 933, 1000	L	E=3.2	Hip6	1.3 V	1.8/2.5	1	1	44	Designed to be pin-compatible with Motorola's MPC7441, the MPC7445 includes 256KB of integrated L2 cache and with no external L3 cache. Product utilizes silicon-on-insulator process technology, enabling processor to deliver increased performance and lower power capabilities. Block address translation (BAT) registers increased from 4 to 8; cache way locking added to the L1 caches.	PowerPC ISA

HOST PROCESSORS (continued)

Product	Packaging	Speed (MHz)	Apps Modr	Rev	Process	100% MAG Voltage Core	Voltage IO/tol (V)	SOQ	MPQ	POQ	Additional Information	Architecture
7451 MPC7451	484-ball RX (CBGA)	600, 667	L	E=2.3	Hip6	1.6 ±0.05 V	1.8/2.5	0	36	180	32-bit superscalar MPU combined with 128-bit AltiVec technology vector processing implementation, dual 32K instruction and data caches, single/ double precision IEEE FPU. High bandwidth 133 MHz 64-bit MPX/ 60x bus interface, integrated 256KB on-chip L2 cache. External L3 cache interface (up to 2 MB). Full symmetric multi-processing capability.	PowerPC ISA
7455 XC7455A	484-ball RX (CBGA)	600, 773, 800, 933, 1000	L	E=3.2	Hip6	1.3 V	1.8/2.5	1	1	36	Designed to be pin-compatible with Motorola's MPC7451/MPC7450, the MPC7455 reaches speeds of 1 GHz and includes 256KB of on-chip L2 cache with support of up to 2MB of backside L3 cache. Product utilizes silicon-on-insulator process technology, enabling processor to deliver increased performance and lower power capabilities. Block address translation (BAT) registers increased from 4 to 8; cache way locking added to the L1 caches.	PowerPC ISA

INTEGRATED HOST PROCESSORS

Product	Packaging	Speed (MHz)	Apps Modr	Rev	Process	100% MAG Voltage Core	Voltage IO/tol (V)	SOQ	MPQ	POQ	Additional Information	Architecture
8240 XPC8240	352-ball ZU (TBGA)	200	L	E=1.3	Hip3	2.5 ±0.125%	3.3/5	2	24	120	32-bit superscalar processor core with integrated peripheral logic. Supports up to 100 MHz 64-bit memory interface and up to 66 MHz 32-bit PCI interface.	PowerPC ISA
XPC8240	352-ball ZU (TBGA)	250	R	E=1.3	Hip3	2.625 ±0.125 V	3.3/5	2	24	120		
8241 XPC8241	357-ball ZP (PBGA)	166, 200	L	B=1.2	Hip4	1.8 ±0.1 V	3.3/5	2	44	220	Functionality of the MPC8245 in lower cost package.	PowerPC ISA
XPC8241	357-ball ZP (PBGA)	166, 200	T	B=1.2	Hip4	1.8 ±0.1 V	3.3/5	2	44	220	Extended Temperature 0 to 105°C T_j.	
8245 XPC8245	352-ball ZU (TBGA)	266, 300	L	B=1.2	Hip4	1.8 ±0.1 V	3.3/5	1	24	144	32-bit superscalar processor core with integrated peripheral logic. Supports up to 133 MHz 64-bit memory interface and up to 66 MHz 32-bit PCI interface, MPC8245 has the on-chip DUART and is pin-compatible with the MPC8240. Extended Temperature 0 to 103°C T_j.	PowerPC ISA
XPC8245	352-ball ZU (TBGA)	266, 300, 333, 350	L	B=1.2	Hip4	2.0 ±0.1 V	3.3/5	1	24	144T		
XPC8245	352-ball ZU (TBGA)	400	R	B=1.2	Hip4	2.1 ±0.1 V	3.3/5	1	24	144T		
XPC8245	352-ball ZU (TBGA)	266, 300	T	B=1.2	Hip4	1.8 ±0.1 V	3.3/5	1	24	144		
XPC8245	352-ball ZU (TBGA)	333, 350	T	B=1.2	Hip4	2.0 ±0.1 V	3.3/5	1	24	144		
XPC8245	352-ball ZU (TBGA)	400	T	B=1.2	Hip4	2.1 ±0.1 V	3.3/5	1	24	144		

MPC823 Integrated Communications Processors *(Standard Temperature: 0°C to 95°C Tj) (Junction Temperature)*

Product	Description	Packaging	Speed (MHz)	Rev	Temp Note (-40°C Ta to 95°C Tj)	SOQ	MPQ	POQ	Additional Information
XPC823	Portable System MPU	256-pin ZT	66, 75, 81	B2T	CZT66	0	60	300	MPU for mobile computing. 256-lead ZT is the preferred package. 823E has 16 KI cache and 8 KD cadre. For samples order: KXPC823ZT81B2T VF is not recommended for New Designs. EOL
XPC823		256-pin VF	66, 75, 81	B2	CVF66	0	60	300	

Note: Extended temperature products with minimum order requirements. All package/speed combinations may not be valid—consult factory to verify.

MPC850 Integrated Communications Processors *(Standard Temperature: 0°C to 95°C Tj)*

Product	Description	Packaging	Speed (MHz)	Rev	Temp Note (-40°C Ta to 95°C Tj)	SOQ	MPQ	POQ	Additional Information
XPC850	Low-Cost Integrated MPU	256-pin ZT	50, 66, 80	BU	CZT50	0	60	300	Low cost, integrated MPU with tailored Communication Processing Module (CPM) including Universal Serial Bus (USB). For samples order: KXPC850SRZT80BU, KXPC850DSLZT50BU
XPC850DE		256-pin ZT	50, 66, 80	BU	CZT50	0	60	300	
XPC850SR		256-pin ZT	50, 66, 80	BU	CZT50	0	60	300	
XPC850DSL		256-pin ZT	50	BU	CZT50	0	60	300	

Note: Extended temperature products with minimum order requirements. All package/speed combinations may not be valid—consult factory to verify.

MPC855T and MPC857T Integrated Communications Processors *(Standard Temperature: 0°C Ta to 95°C Tj)*

Product	Description	Packaging	Speed (MHz)	Rev	Temp Note (-40°C Ta to 95°C Tj)	SOQ	MPQ	POQ	Additional Information
XPC855T	Low-Cost Integrated MPU	357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	Low cost, integrated MPU with tailored CPM including Fast Ethernet. Samples and production available now.
XPC857T		357-pin ZP	50, 66, 80	0	CZP50,66	0	44	220	Low cost, integrated MPU with tailored CPM simultaneous operation of Fast Ethernet (MII) and Parallel ATM (Utopia).
XPC857T		357-pin ZP	50, 60, 80, 100	B	CZP50,66,80	0	44	220	Samples and production available now.
XPC857DSL		357-pin ZP	50, 66	B	n/a	0	44	220	Samples and production available now.

Note: Extended temperature products with minimum order requirements. All package/speed combinations may not be valid—consult factory to verify. For XPC857T Rev B, standard temperature 0°C T_a to 105°C T_j; extended temperature -40°C T_a to 115°C T_j.

HOST COMMUNICATIONS PROCESSORS (continued)

MPC860 and MPC862 Integrated Communications Processors *(Standard Temperature: 0°C Ta to 95°C Tj)*

Product	Description	Packaging	Speed (MHz)	Rev	Temp Note (-40°C Ta to 95°C Tj)	SOQ	MPQ	POQ	Additional Information
XPC860DE	PowerQUICC™ MPU	357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	PowerQUICC family with embedded 8xx core—with 4KB I-cache, 4KB D-cache, and MMUs integrated with CPM of earlier generation 68360 QUICC. 860P and 860DP has 16K I-cache and 8K D-cache. Samples and production available now.
XPC860DP		357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	
XPC860DT		357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	
XPC860EN		357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	
XPC860P		357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	
XPC860SR		357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	
XPC860T		357-pin ZP	50, 66, 80	D4	CZP50,66	0	44	220	
XPC862DT		357-pin ZP	50, 66, 80	0	CZP50,66	0	44	220	Rev 0 of the 862 PowerQUICC family including simultaneous operations of Fast Ethernet (MII) and Parallel ATM (Utopia). Rev. 0 is not recommended for new designs. Rev B of the 862 PowerQUICC family including simultaneous operation of the Fast Ethernet (MII) and Parallel ATM (Utopia), Utopia 11 Multi-Phy, Utopia Slave, and AAL2/VBR. Rev B samples and production available now.
XPC862P		357-pin ZP	50, 66, 80	0	CZP50,66	0	44	220	
XPC862P		357-pin ZP	50, 66, 80, 100	B	CZP50,66,80	0	44	220	
XPC862SR		357-pin ZP	50, 66, 80	0	CZP50,66	0	44	220	
XPC862T		357-pin ZP	50, 66, 80	0	CZP50,66	0	44	220	
XPC862T		357-pin ZP	50, 66, 80, 100	B	CZP50,66,80	0	44	220	

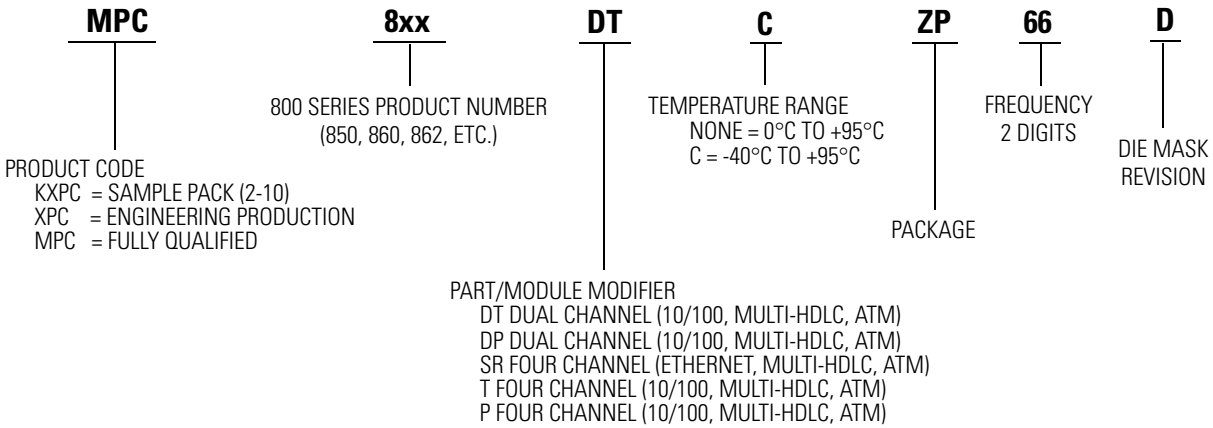
Note: Extended temperature products with minimum order requirements. All package/speed combinations may not be valid—consult factory to verify. For XPC862T, XPC862P Rev B, standard temperature 0°C T_a to 105°C T_j; extended temperature -40°C T_a to 115°C T_j.

MPC823/MPC850/MPC855T/MPC857T/MPC860/MPC862 Processor Derivatives and Features

Product	I-Cache (Kbyte)	D-Cache (Kbyte)	10T	10/100	ATM	ESAR/ATM	(No of Channels)		#T1/E1	USB (v1.1)
							HDLC	SCC		
MPC823	2	1	Up to 2	n/a	n/a	n/a	Up to 64	2	n/a	Y
MPC823E	16	8	Up to 2	n/a	n/a	n/a	Up to 64	2	n/a	Y
MPC850	2	1	1	n/a	n/a	n/a	n/a	1	n/a	Y
MPC850DE	2	1	Up to 2	n/a	n/a	n/a	n/a	2	n/a	Y
MPC850SR	2	1	Up to 2	n/a	Y	n/a	Up to 64	2	2	Y
MPC850DSL	2	1	1	n/a	Y	n/a	n/a	2	n/a	Y
MPC855T	4	4	1	1	Y	n/a	Up to 32	1	1	n/a
MPC857T	4	4	1	1	Y	Y	Up to 32	1	1	n/a
MPC857DSL	4	4	1	1	Y	Y	n/a	1	n/a	n/a
MPC860DE	4	4	Up to 2	n/a	n/a	n/a	n/a	2	n/a	n/a
MPC860DP	16	8	Up to 2	1	Y	n/a	Up to 64	2	2	n/a
MPC860DT	4	4	Up to 2	1	Y	n/a	Up to 64	2	2	n/a
MPC860EN	4	4	Up to 4	n/a	n/a	n/a	n/a	4	n/a	n/a
MPC860P	16	8	Up to 4	1	Y	n/a	Up to 64	4	2	n/a
MPC860SR	4	4	Up to 4	n/a	Y	n/a	Up to 64	4	2	n/a
MPC860T	4	4	Up to 4	1	Y	n/a	Up to 64	4	2	n/a
MPC862DT	4	4	Up to 2	1	Y	Y	Up to 64	2	2	n/a
MPC862P	16	8	Up to 4	1	Y	Y	Up to 64	4	2	n/a
MPC862SR	4	4	Up to 4	n/a	Y	Y	Up to 64	4	2	n/a
MPC862T	4	4	Up to 4	1	Y	Y	Up to 64	4	2	n/a

HOST COMMUNICATIONS PROCESSORS (continued)

Product Numbering System for MPC8xx Family



68K Integrated Communication Processors

Product	Description	Packaging	Speed (MHz)	Rev	Temp Note (-40°C to 85°C)	SOQ	MPQ	POQ	BRICK	Additional Information
MC68302	Intergrated Multiprotocol Processor (IMP)	132-pin FC	16, 20, 25	C	CFC16,20	0	36	144	180	68000 core with three high-performance multiprotocol serial channels also on-chip DMA, RAM, timers, I/O, chip select, and wait state interrupt controller. For samples order: SPAK302FC20C, SPAK302FC25C, SPAK302PV33C, SPAK302RC25C, SPAK302PV16VC
		144-pin PV	16, 20, 25, 33	C	n/a	0	60	300	300	
		132-pin RC	16, 20, 25	C	CRC16,20	0	14	70	N/A	
MC68302V		144-pin PV	16 @ 3.3 V	C	CPV16V	0	60	300	300	
MC68EN302	Intergrated Multiprotocol Processor with Ethernet Controller	144-pin PV	20, 25	BT	CPV20	0	60	300	300	Full 68302, plus separate IEEC 802.2 Ethernet MAC channel and full DRAM controller. For samples order: KMC68EN302PV25B
MC68LC302	Low-Cost Intergrated Multiprotocol Processor	100-pin PU	16, 20, 25 @ 5 V 16,20 @ 3.3 V	CT CT	CPU16,20 CPU16V	0	84	420	420	Static EC000 Core Processor with two high-performance multiprotocol serial channels; also on-chip DMA, RAM, timers, I/O, chip selects, and wait state interrupt controller. For PU samples order: KMC68LC302PU25CT, KMC68LC301PU20VC
MC68360	QUICC Quad Intergrated Communications Controller	240-pin EM	25, 33 @ 5.0 V	L	CEM25	0	24	120		CPU32 + core with System Intergration Module (SIM) and four high-performance SCCs support numerous protocols. Two SCCs support Ethernet on "EN" version. For EM sample order: KMC68EN360EM25L, KMC68EN360EM33L, KMC68EN360EM25VL, KMC68EN360CEM25L For ZP sample order: KMC68EN360EM25VL, KMC68EN360ZP33L, KMC68EN360ZP25VL, KMC68EN360CZP25L For RC sample order: KMC68EN360RC33L, KMC68EN360CRC25L
		357-pin ZP		L	CZP25	0	44	220		
		241-pin RC		L	CRC25	0	10	50		
MC68360V		240-pin EM	25 @ 3.3 V	L		0	24	120		
		357-pin ZP		L		0	44	220		
MC68EN360		240-pin EM	25, 33 @ 5.0 V	L	CEM25	0	24	120		
		357-pin ZP		L	CZP25	0	44	220		
		241-pin RC		L	CRC25	0	10	50		
MC68EN360V		240-pin EM	25 @ 3.3 V	L		0	24	120		
		357-pin ZP		L		0	44	220		
MC68MH360		240-pin EM	25, 33 @ 5.0 V	L	CEM25	0	24	120		One-chip intergrated microprocessor and peripheral combination with four SCCs, two serial management controllers (SMCs), and one serial peripheral interface (SPI). For EM sample order: KMC68MH360EM33L, KMC68MH360EM25VL, KMC68MH360CEM25L For ZP sample order: KMC68MH360ZP25VL, KMC68MH360ZP33L, KMC68MH360CZP25L For RC sample order: KMC68MH360RC33L, KMC68MH360CRC25L
		357-pin ZP		L	CZP25	0	44	220		
		241-pin RC		L	CRC25	0	10	50		
MC68MH360V		240-pin EM	25 @ 3.3 V	L		0	24	120		
		357-pin ZP		L		0	44	220		

Note: Extended temperature products with minimum order requirements. All package/speed combinations may not be valid—consult factory to verify.

MPC8250/MPC8255/MPC8260/MPC8264/MPC8265/MPC8266 PowerQUICC II™

Product	Description	CPU/CPM/Bus Speed (MHz)	Rev	Packaging	Std Temp Note (0°C to 105°C)	Ext Temp Note (40°C to 105°C)	Samples	SOQ	MPQ	POQ	Additional Information
XPC8255	PowerQUICC II (HiP3)	200/133/66 (IFB)	C2	480-ball ZU (TBGA)	XPC8255ZUIFBC	XPC8255CZUIFBC	KXPC8255CZUIFBC	2	21	105	Low-cost derivative of 8260.
XPC8260	PowerQUICC II (HiP3)	166/133/66 (HFB) 200/133/66 (IFB) 200/166/66 (IHB)	C2	480-ball ZU (TBGA)	XPC8260ZUxxxC	XPC8260CZUxxxC	KXPC8260CZUxxxC	2	21	105	Supports fast ethernet HDLC channels and OC-3 ATM up to 200 MHz CPU, 166 MHz CPM, 66 MHz Bus.
MPC8250A	PowerQUICC II (HiP4)	266/166/66 (MHB) 300/200/66 (PIB) 200/166/66 (IHB)	B	516-ball PBGA	XPC8250AZUxxxB	XPC8250ACZUMHBB	KXPC8250ACZUMHBB	2	21	105	Low-cost PCI derivative.
MPC8255A	PowerQUICC II (HiP4)	266/166/66 (MHB) 300/300/66 (PIB)	B	480-ball ZU (TBGA)	XPC8255AZUIFB	XPC8255ACZUMHB	KXPC8255ACZUMHB	2	21	105	Low-cost standard derivative.
MPC8260A	PowerQUICC II (HiP4)	300/200/66 (PIB) 333/208/83 (PJD) 266/166/66 (MHB) 266/200/66 (MIB)	B	480-ball ZU (TBGA)	XPC8260ZUxxx	XPC8260CZUMHB	KXPC8260AZUQJD	2	21	105	Next-generation of PQ2 product family. Standard device.
MPC8264A	PowerQUICC II (HiP4)	300/200/66 (PIB) 266/166/66 (MHB) 266/200/66 (MIB) 300/308/83 (PJD)	B	480-ball ZU (TBGA)	MPC8264ZUxxx	PPC8264CZUMHB	PPC8264AZUPJD	2	21	105	Supports TC-layer and IMA microcode on standard device.
MPC8265A	PowerQUICC II (HiP4)	300/200/66 (PIB) 266/166/66 (MHB) 266/200/66 (MIB) 300/208/83 (PJD)	B	480-ball ZU (TBGA)	XPC8265ZUxxx	XPC8265CZUMHB	KXPC8265AZUMHB	2	21	105	Supports PCI on standard device.
MPC8266A	PowerQUICC II (HiP4)	300/208/83 (PJD)	B	480-ball ZU (TBGA)	PPC8266ZUxxx	PPC8266CZUMHB	PPC8266AZUMHB	2	21	105	Superset, supporting TC/IMA and PCI.
MPC8270	PowerQUICC II (HiP7)	266/166/66 (MHB) VR only 333/250/83 (QLD) 450/300/100 (UPE)	0	516-ball VR (PBGA) 480-pin ZU (TBGA)	MPC8270xxxxx	MPC8270CXXQLD	KMPC	2	21	105	Sampling Q2/2003 Ethernet only device
MPC8275	PowerQUICC II (HiP7	266/166/66 (MHB)	0	516-ball VR (PBGA)	MPC8275VRMHB	MPC8275CVRHB	KMPC	2	21	105	Sampling Q2/2003 Low-cost ATM device
MPC8280	PowerQUICC II (HiP7)	333/250/83 (QLD) 450/300/100 (UPE)	0	480-ball ZU (TBGA)	MPC8280xxxxx	MPC8280CXXQLD	KMPC	2	21	105	Sampling Q2/2003 Full-feature device
CPU/CPM/BUS SPEED FOR POWERQUICC II (HIP 3/4)		A = 50 H = 166	B = 66 I = 200	C = 75 J = 208	D = 83 K = 233	E = 100 L = 250	F = 133 M = 266	G = 150 N = 291		P = 300	Q = 333

Note: Extended temperature devices with minimum order requirements. All package/speed combinations may not be valid—consult factory to verify.

MPC8250/MPC8255/MPC8260/MPC8264/MPC8265/MPC8266 PowerQUICC II Derivatives and Features

Product	I-Cache (Kbyte)	D-Cache (Kbyte)	10T	10/100	Utopia ATM Support	(Number of Channels)		FCC	MCC	#T1/E1	#T3/E3	USB (v1.1)	PCI
						HDLC	SCC						
MPC8250	16	16	Up to 4	Up to 3	0	Up to 128	4	3	1	4	1	n/a	Y
MPC8255	16	16	Up to 4	Up to 2	1 Ch. (155 Mbps)	Up to 128	4	2	1	4	1		n/a
MPC8260	16	16	Up to 4	Up to 3	2 Ch. (155 Mbps ea)	Up to 256	4	3	2	8	2	n/a	n/a
MPC8264	16	16	Up to 4	Up to 3	2 Ch. (155 Mbps ea)	Up to 256	4	3	2	8	2	n/a	n/a
MPC8265	16	16	Up to 4	Up to 3	2 Ch. (155 Mbps ea)	Up to 256	4	3	2	8	2	n/a	Y
MPC8266	16	16	Up to 4	Up to 3	2 Ch. (155 Mbps ea)	Up to 256	4	3	2	8	2	n/a	Y

SOFTWARE AND DEVELOPMENT TOOLS
SOFTWARE TOOLS
68K, ColdFire, MPC5xx, PowerPC ISA, and MCORE — Metrowerks

Product	Description	Target Support	RTOS Support	Board Support	Host-Target Interface	Host Platforms	Language Support	Compiler Output Formats
CW68K	CodeWarrior Software Development Tools for 68K Embedded Systems	68xxx, MC68360, MC68SZ328, MC68VZ328, MC68EZ328	PPSM, RTXC, ATI	DragonBall EZ (M68EZ328ADS), DragonBall VZ (M68VZ328ADS), ADS68360, DragonBall Super VZ (M68SZ328ADS)	MetroTRK, P&E Microcomputer CPU32 BDM Cable	Windows 98/2000/ME/ NT	C/C++, 68000 Assembly	ELF/DWARF; Motorola S-Record
CWCF	CodeWarrior Software Development Tools for ColdFire Embedded Systems	MCF5206e, MCF5307, MCF5407, MCF5272, MCF5249	Precise-MQX, Quadros-RTXC, Blunk-Target OS, KADAK-AMX, Micro Digital-SMX, ATI-Nucleus Plus	M5249C3, M5307C3, M5407C3, M5272C3, M5206eC3; M5282EVB	P&E Microcomputer ColdFire BDM Cable; Abatron BDI	Windows 98/2000/ME/ NT	C/C++, ColdFire Assembly	ELF/DWARF; Motorola S-Record
CWEPPC	CodeWarrior Software Development Tools for PowerPC ISA	MPC555, MPC561, MPC562, MPC563, MPC564, MPC565, MPC566, MPC7xx, MPC7410MPC8xx, MPC82xxMPC821, MPC823e, MPC850, MPC860, MPC8240, MPC8260, PPC603, PPC603ei, MPC7400, MGT5100	QNX Neutrino, RTXC from Lineo, Embedix SDK from Lineo, Precise MQX, ATI Nucleus	MPC8260, ADS-P, RPX Lite, RPX Classic, Motorola FADS MBX, Sandpoint, Cognet CMA 102, Axiom 555, Motorola ETAS555, Eximer, AMC Eval	MetroTRK, Applied Microsystems CodeTAP, Applied Microsystems PowerTAP, Applied Microsystems WireTAP Run Control Interface (JTAG and BDM [8xx only]), Macraigor Systems COP Raven (for MPC82xx and PPC6xx), Macraigor Systems BDM Raven (for MPC8xx, MPC5xx), Abatron BDI 2000 (5xx, 8xx), Agilent ES900B Emulation Probe (all processors), P&E Wiggler BDM	Windows 95/98/2000/ ME/NT	C/C++, EC++, and PowerPC ISA Assembly	ELF/DWARF 1.0; Motorola S-Record
CWMCORE	CodeWarrior Software Development Tools for MCORE	M2xx/3xx family processors	—	MMC2001; MMC2075/2080, MMC2107, MMC2103, MMC3401, MMC2114	MetroTRK, Metrowerks EBDI	Windows 95/98/2000/ NT	C/C++, Assembly	ELF/DWARF 1.0; Motorola S-Record

Other Software

Company	Product Name	Product Type
Bytecodes	Embedded Bytecode Interpreter	Optimized Java Virtual Machines
Counterpoint Systems Foundry	IrLite Development Kit	Infrared communications SDK
Precise Software Technologies	Various	Embedded I/O components
Grammar Engine	PromICE	Firmware development
Inverness Systems	ATIC	ATM protocols and applications
Micro APL	PortAsm	Porting tools that implement the PowerPC architecture [Note]
Pacific Softworks	Fusion	Internet protocols for Embedded Solutions
Sun Consumer Electronics	Internet Software Solution	Embedded internet software
Total Impact	Total PowerSMPPCI	Multiprocessing application accelerator
US Software	USNET	Real-time embedded TCP/IP
Wind River Systems	SystemsWind	ViewSystem visualizer for embedded software

Note: Check with tool vendor for specific derivative support.

HARDWARE TOOLS

Metrowerks

Product	Description	Target Board	Power Supply	Schematic	Documentation	Interface Board/ Wiggler	RTOS Support
MPC823FADS	MPC823 FADS Board	•	•	•	•	•	•
MPC850SRFADS	MPC850 FADS Board	•	•	•	•	•	•
MPC8260ADS-PQ2	MPC8260 ADS Board	•	•	•	•	•	•
MPC860FADS	MPC860 FADS Board	•	•	•	•	•	•
MPC860TFADS	MPC860 TFADS Board	•	•	•	•	•	•
MPC862ADS	MPC862 ADS Board	•			•		
MPC862ADS-KIT	MPC862 ADS Board with Debugger and Host Software	•	•	•	•	•	•
MMCEVB1200PV	MMC2001 Low Cost Evaluation	•	•	•	•		
MMCEVB1200PV-A	MMC2001 Low Cost Evaluation Academic	•	•	•	•		
MMCCMB1200	MMC2001 Development Platform	•	•	•	•		
KITEVSMMC1200	MMC2001 High Performance System	•	•	•	•	•	
MMCEVB2107	MMC2107 Low Cost Evaluation	•	•	•	•		
MMCEVB2114	MMC2113/2114 Evaluation Board	•	•		•		•
MMCCMB2107	MMC2107 Development Platform	•	•	•	•		
MMCCMB2114	MMC2113/2114 Development System	•	•		•		•
KITEVSMMC2107	MMC2107 High Performance System	•	•	•	•	•	
KITEVSMMC2107	MMC2107 Complete Development System	•	•	•	•		
M5206EC3	MCF5206E Development System	•		•	•	•	•
M5307C3	MCF5307 Development System	•		•	•	•	•
M5407C3	MCF5407 Development System	•		•	•	•	•
M5272C3	MCF5272 Development System	•		•	•	•	•
M5249C3	MCF5249 Development System	•		•	•	•	•
MPC564EVB	MPC564 Evaluation Board	•	•	•	•	•	•
MPC566EVB	MPC566 Evaluation Board	•	•	•	•	•	•

SOFTWARE AND DEVELOPMENT TOOLS (continued)
HARDWARE TOOLS (continued)

Host and Communication Processors

Company	Product Name	Motorola Products Supported
3M	Interconnects & Socket Adapters	Products that implement the PowerPC architecture Note
AMP	Interconnects & Socket Adapters	Products that implement the PowerPC architecture Note
Applied Microsystems	SuperTAP, CodeTAP, NetROM	MPC821
ASIC Designs	PowerPAQ Handheld Reference Platform	MPC821/823
Atlas Communication Engines	ACE860 Internetworking System	MPC821/823
Cogent Computer Systems	MPU Development Platform	603e, 604(e), MPC505/509, MPC801/821/823/850/860
Digital Logic Instruments (DLI)	Personal Line and proLine Logic	MPC5xx, MPC8xx analyzers
DY 4 Systems Embedded Support	S/DMV VMEbus Evaluation Boards	603e, 604e, MPC801/821/823/850/860
Tools (ET) Emulation Technology	BGA Socket/Probing System	Products that implement the PowerPC architecture Note
EmuTec	PROMJet and DebugJet Emulators	Products that implement the PowerPC architecture Note
Hewlett-Packard	Emulators, Logic Analyzers	Products that implement the PowerPC architecture Note
Huntsville Microsystems	Series 200/1000/2000 ICE, Background Mode Debuggers	MPC5xx, MPC8xx
Lauterbach	TRACE32-ICE	MPC505/509, MPC821/860, MPC5xx Family
Macraigor Systems	Serial BDM Wiggler	MPC5xx, MPC8xx
Methode Electronics	Interconnects & Socket Adapters	Products that implement the PowerPC architecture Note
Microtek International	MICEpack-J BDM	MPC860
Radstone Technology	VME single board computers	603e, 604e
Smart Modular Technologies	SMARTengine/603PCI	603e
Tektronix	Oscilloscopes, Logic Analyzers	Products that implement the PowerPC architecture Note
Tundra Semiconductor	QSpan PCI Bus Bridge	MPC821/860
V-I Computer	PowerPC ISA single board computers	603e, 604e
Vista Controls	SCORE 603	603e

Note: Check with tool vendor for specific derivative support.

SOFTWARE AND DEVELOPMENT TOOLS (continued)

DEVELOPMENT SYSTEMS

Metrowerks

Product	Description	RTOS Support	Debug Interface	Serial Cable	CD ROM	User Manuals	Power Supply	Host Platforms
CWDEVSYS5272	CodeWarrior Development System for ColdFire MCF5273 (1) (2)	•	•	•	•	•	•	Windows 95/98/2000/NT
CWDEVSYS5272	CodeWarrior Development System for ColdFire MCF5407 (1) (2)	•	•	•	•	•	•	Windows 95/98/2000/NT
CWDEVSYS823FADS (2)	CodeWarrior Development System for MPC823	•	•		•	•	•	Windows 95/98/2000/ME/NT
CWDEVSYS850FADS (2)	CodeWarrior Development System for MPC850	•	•		•	•	•	Windows 95/98/2000/ME/NT
CWDEVSYS860FADS (2)	CodeWarrior Development System for MPC860	•	•		•	•	•	Windows 95/98/2000/ME/NT
CWDEVSYS860TFADS (2)	CodeWarrior Development System for MPC860T	•	•		•	•	•	Windows 95/98/2000/ME/NT
CWDEVSYS8260AMC (2)	CodeWarrior Development System for MPC8260	•	•		•	•	•	Windows 95/98/2000/ME/NT

Notes:
1. 12-month support plan available
2. Contact Metrowerks for more information

CABLES AND HOST-TARGET INTERFACES

Metrowerks

Product Number	Description	Target Support	Connection Product	Power Supply
CWWIRETAPBDM	AMC's WireTAP Run Control Interface (BDM)	—	—	—
CWWIRETAPJTAG	AMC's WireTAP Run Control Interface (MPC6xx, 7xx, 82xx, 74xx)	—	—	—
MMC14EBD102	Enhanced Background Debug Interface	—	—	—

THIRD PARTY TOOLS

Compilers

Company	Product Name	Motorola Products Supported
Green Hills Software	Optimizing Compilers	Products that implement the PowerPC architecture Note
Metaware	High C/C++ Cross Toolset	6xx, MPC5xx, MPC8xx
Mentor Graphics (Microtec Division)	C & C++ Compilers	603(e), 604(e), MPC505, MPC801/821/860
Microware	FasTrak v2.1 IDE	Products that implement the PowerPC architecture Note
TASKING	EDE, C/C++/EC++ Compiler products that implement the PowerPC architecture	

Note: Check with tool vendor for specific derivative support.

THIRD PARTY TOOLS

32-Bit Third Party Tools 68xxx, 683xx, MPC500, MCORE, and ColdFire

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Assemblers						
Avocet Systems, Inc.		•				www.avocetsystems.com
Green Hills Software	•	•	•	•	•	www.ghs.com
P&E Microcomputer Systems, Inc.		•			•	www.pemicro.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Company	**68xxx**	**68300**	**MPC500**	**MCORE**	**ColdFire**	**Web Address**
BDM Support Tools						
Cosmic Software		•				www.cosmic-software.com
Wind River Systems		•	•	•	•	www.wrs.com
Hitex Development Tools		•				www.hitex.com
Agilent Technologies, Inc.		•	•	•		www.agilent.com
iSystem		•		•		www.isystem.com
Lauterbach		•		•	•	www.lauterbach.com
Macraigor Systems LLC		•	•			www.macraigor.com
P&E Microcomputers, Inc.		•			•	www.pemicro.com
TASKING		•				www.tasking.com
Company	**68xxx**	**68300**	**MPC500**	**MCORE**	**ColdFire**	**Web Address**
Code Coverage Tools						
Ashling Microsystems			•			www.ashling.com
Cosmic Software		•				www.cosmic-software.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
Hitex Development Tools		•				www.hitex.com
iSystem		•	•			www.isystem.com
TASKING		•		•		www.tasking.com

32-Bit Third Party Tools 68xxx, 683xx, MPC500, MCORE, and ColdFire (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Compilers						
Accelerated Technology Inc.		•	•		•	www.acceleratedtechnology.com
Byte Craft Limited				•		www.bytecraft.com
TASKING.		•		•		www.tasking.com
Cosmic Software		•				www.cosmic-software.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
P&E Microcomputers, Inc.		•			•	www.pemicro.com
GNU	•				•	www.gnu.org
Metrowerks		•	•	•	•	www.metrowerks.com
Company	**68xxx**	**68300**	**MPC500**	**MCORE**	**ColdFire**	**Web Address**
Debuggers						
Ashling Microsystems		•	•			www.ashling.com
Accelerated Technology Inc.		•	•	•	•	www.acceleratedtechnology.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
iSystem		•	•	•		www.isystem.com
Lauterbach	•	•	•	•	•	www.lauterbach.com
P&E Microcomputers, Inc.		•			•	www.pemicro.com
Metrowerks		•	•	•	•	www.metrowerks.com
Company	**68xxx**	**68300**	**MPC500**	**MCORE**	**ColdFire**	**Web Address**
Evaluation Boards						
Axiom Manufacturing			•	•		www.axman.com
Arrow		•	•	•	•	www.arrow.com
Avnet		•	•	•	•	www.avnet.com
Future		•	•	•	•	www.future.com
Matrix Design Inc.					•	www.cadreiii.com
Metrowerks		•	•	•	•	www.metrowerks.com

32-Bit Third Party Tools 68xxx, 683xx, MPC500, MCORE, and ColdFire (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Logic Analyzers						
Agilent Technologies, Inc.		•	•	•		www.agilent.com
iSystem		•				www.isystem.com
Tektronix		•	•	•		www.tek.com/measurement/logic_analyzers/
In-Circuit Emulators or Hardware Debug Interface						
Ashling Microsystems		•	•			www.ashling.com
Wind River Systems		•	•		•	www.wrs.com
Hitex Development Tools		•				www.hitex.com
iSystem		•	•			www.isystem.com
Lauterbach		•	•		•	www.lauterbach.com
Microtek International Inc.		•			•	www.microtek.com.tw/mice
Company	**68xxx**	**68300**	**MPC500**	**MCORE**	**ColdFire**	**Web Address**
Performance Analysis Tools						
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
iSystem		•	•			www.isystem.com
Company	**68xxx**	**68300**	**MPC500**	**MCORE**	**ColdFire**	**Web Address**
Real-Time Operating Systems						
Accelerated Technology Inc.	•	•	•	•	•	www.atinucleus.com
Lineo		•	•	•	•	www.rtxc.com
ETAS		•	•			www.etasinc.com
Green Hills Software	•	•	•	•	•	www.ghs.com
Precise Software	•	•	•	•	•	www.psti.com
Snap Gear					•	www.snapgear.com
TASKING		•				www.tasking.com
U S Software		•	•		•	www.ussw.com
Wind River Systems	•				•	www.wrs.com

32-Bit Third Party Tools 68xxx, 683xx, MPC500, MCORE, and ColdFire (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Simulation Tools						
Wind River Systems	•	•		•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
TASKING		•		•		www.tasking.com

SOFTWARE AND DEVELOPMENT TOOLS (continued)
THIRD PARTY TOOLS (continued)

Debuggers

Company	Product Name	Motorola Products Supported
Accelerated Technology	XRAY	68K/ColdFire/MCORE/products that implement the PowerPC architecture Note
Avocet Systems, Inc.	SourceGate II	68K/ColdFire/products that implement the PowerPC architecture Note
Green Hills Software	MULTI	68K/683xx/ColdFire/MCORE/products that implement the PowerPC architecture Note
Lauterbach	TRACE32	Products that implement the PowerPC architecture Note
Mentor Graphics	XRAY	603(e), 604(e), MPC505, MPC801/821/860
TASKING	CrossView Pro	Products that implement the PowerPC architecture Note
Wind River Systems	Tornado	Products that implement the PowerPC architecture Note

Note: Check with tool vendor for specific derivative support.

Chip Drivers

Company	Product Name	Motorola Products Supported
Aisys	DriveWay	MPC821/850/860
Embedded Concepts and Solutions	n/a	6xx, 7xx, MPC8xx
Inverness Systems	n/a	MPC860
Precise Software Technologies	n/a	Products that implement the PowerPC architecture Note
Target Technologies	n/a	MPC860

Note: Check with tool vendor for specific derivative support.

Real Time Operating Systems and Kernels

Company	Product Name	Motorola Products Supported
Accelerated Technology	Nucleus +	68K/683xx/ColdFire/MCORE/products that implement the PowerPC
CMX	CMX-RTX	Products that implement the PowerPC architecture Note
Enea OSE Systems	OSE Real-Time Kernel	Products that implement the PowerPC architecture Note
Etno Team	EOS	MPC5xx
Express Logic	ThreadX	Products that implement the PowerPC architecture Note
Green Hills Software	Integrity, VelOSity	Products that implement the PowerPC architecture Note
JMI Software SYS	C Executive, PSX	Products that implement the PowerPC architecture Note
KADAK Products	AMX	Products that implement the PowerPC architecture Note
Lynx Real-Time SYS	LynxOS	603, 603e, 604, 604e, MPC821, MPC860;
Microtec Division	VRTXsa	Products that implement the PowerPC architecture Note
Micro Digital	smx Modular RTOS	Products that implement the PowerPC architecture Note
Microware Systems	OS-9	Products that implement the PowerPC architecture Note
Precise Software TECH	Precise/MQX	Products that implement the PowerPC architecture Note
QNX	QNX RTOS	MPC8xx
Motorola	RTEK	MPC5xx, MPC8xx
Tao Systems	Elate	Products that implement the PowerPC architecture Note
US Software	superTask RTOS	Products that implement the PowerPC architecture Note
Wind River Systems	VxWorks	Products that implement the PowerPC architecture Note

Note: Check with tool vendor for specific derivative support.

Models

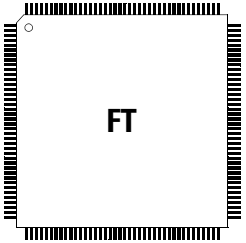
Company	Product Name	Motorola Products Supported
Mentor Graphics	Seamless Co-Verification Environment	Products that implement the PowerPC architecture Note
Summit Design	Virtual-CPU Co-Verification Environment	Products that implement the PowerPC architecture Note
Simpod, Inc.	DeskPOD	Products that implement the PowerPC architecture Note
Synopsys	Various	Products that implement the PowerPC architecture Note

Note: Check with tool vendor for specific derivative support.

Functional Test and Diagnosis

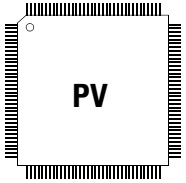
Company	Product Name	Motorola Products Supported
International Test Technologies	µMaster 4031 (PXI version)	603e, 740, 750, 7400, 8240
International Test Technologies	µMaster 4031 (PCI version)	603e, 740, 750, 7400, 8240

PACKAGING



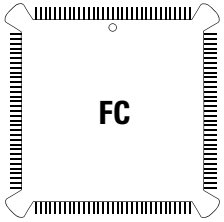
208/144/160-Pin QFP

.65 mm Pitch
28 mm x 28 mm Body



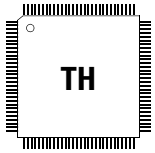
112/144-Pin LQFP

.5 mm Pitch
20 mm x 20 mm Body



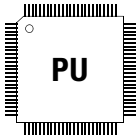
132-Pin PQFP

25 mil/06.35 mm Pitch
0.950 in x 0.950 in Body
(Nominal, w.o. Bumpers)



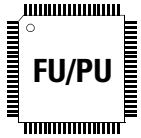
120-Pin QFP/LQFP

.5 mm Pitch
16 mm x 16 mm Body



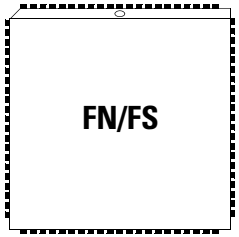
100-Pin LQFP

.5 mm Pitch
14 mm x 14 mm Body



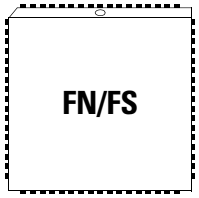
80-Pin QFP/LQFP

.65 mm Pitch
14 mm x 14 mm Body



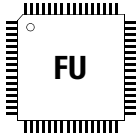
84-Pin PLCC/CLCC

50 mil/1.27 mm Pitch
1.15 in x 1.15 in Body



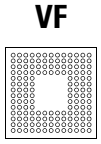
68-Pin PLCC/CLCC

50 mil/1.27 mm Pitch
0.950 in x 0.950 in Body



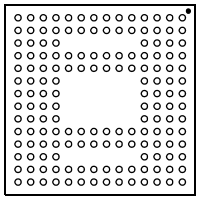
64-Pin QFP

.8 mm Pitch
14 mm x 14 mm Body

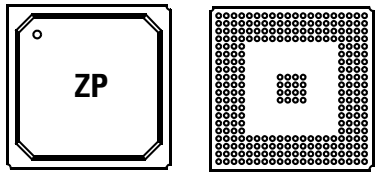


144-Ball Grid Array (BGA)

.8 mm Ball Pitch
12 mm x 12 mm x 1.6 mm

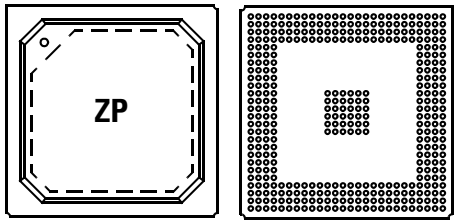


160-Plastic Ball Grid Array
(MAPBGA)



272-Ball PBGA

1.27 mm Pitch
27.0 mm x 27.0 mm Body



388-Ball PBGA

1 mm Pitch
27.0 mm x 27.0 mm Body

— Package Designators —

B — Shrink DIP (70 mil spacing)
DW — Small Outline (Wide-Body SOIC)
FA — 7 x 7 mm Quad Flat Pack (QFP)
FB — 10 x 10 mm Quad Flat Pack (QFP)
FC — Plastic Quad (Gull Wing)
FE — CQFP (windowed) — Samples Only
FG — 14 x 20 mm Plastic Quad Flat Pack (PQFP)
FN — Plastic Quad (PLCC)
FS — CLCC (windowed) — Samples Only
FT — 28 x 28 mm Quad Flat Pack (QFP)
FU — 14 x 14 mm Quad Flat Pack (QFP)
FZ — CQFP (windowed) — Samples Only
K — Cersdip (windowed) — Samples Only
L — Ceramic Sidebraze
P — Dual in-Line Plastic
PB — 10 x 10 mm Quad Flat Pack (QFP)
PU — 14 x 14 mm Low-Profile Quad Flat Pack (LQFP)
PV — 20 x 20 mm Low-Profile Quad Flat Pack (LQFP)
RC — Pin Grid Array, Gold Lead Finish
S — Cerdip (windowed) — Samples Only
SD — Shrink Small Outline Package (SSOP)
VF — 1.6 mm Thick MAPBGA
ZP — Plastic Ball Grid Array (PBGA)
ZU — Tape Ball Grid Array, 352 and 480 Lead

What's EOL?

END-OF-LIFE PRODUCTS

Motorola SPS follows the industry standard "EIA-724 Product Life Cycle Data Model" to track the life cycle of its product. This model tracks the product's life cycle from "Product Newly Introduced" to "Product Phase Out." Products can be phased for a variety of reasons: improved product performance, change in technology roadmap, process obsolescence, market decline, etc.

When products are discontinued, a suggested possible replacement product or an alternative source of supply for discontinued products are made available when possible.

For a list of discontinued products with possible alternative suppliers, contact your local Motorola sales office or authorized distributor.

Product	Last Order Date	Last Ship Date	Possible Replacement
MPC603EFE133LN	1/24/01	6/30/01	MPC603RRXLC/XPC603RZTLC
MPC603ERX133LN	1/24/01	6/30/01	MPC603RRXLC/XPC603RZTLC
XPC740P	3/14/02	9/14/02	XPC745B
XPC750P	3/14/02	9/14/02	XPC755B
XPC821	12/30/01	06/29/02	None
MC68824	9/30/01	12/31/01	None
MC68QH302	2/21/01	8/21/01	None
XPC801	2/9/01	8/9/01	None
MCF5102	7/30/02	2/04/03	MCF5206 or MCF5249
MCF5202	7/30/02	2/04/03	MCF5206 or MCF5249
MCF5204	7/30/02	2/04/03	MCF5206 or MCF5249
MC68606	4/1/03	12/31/03	None

NOTES

NOTES

HOW TO REACH US:

USA/EUROPE/LOCATIONS NOT LISTED:
Motorola Literature Distribution
P.O. Box 5405
Denver, Colorado 80217
1-303-675-2140
1-800-441-2447

JAPAN:
Motorola Japan Ltd.
SPS, Technical Information Center
3-20-1, Minami-Azabu
Minato-ku
Tokyo 106-8573, Japan
81-3-3440-3569

ASIA/PACIFIC:
Motorola Semiconductors H.K. Ltd.
Silicon Harbour Centre
2 Dai King Street
Tai Po Industrial Estate
Tai Po, N.T. Hong Kong
852-26668334

TECHNICAL INFORMATION CENTER:
1-800-521-6274

HOME PAGE:
http://www.motorola.com/semiconductors

MOTOROLA

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